

Appl. No. 10/707,319
Amdt. dated July 12, 2006
Reply to Office action of May 16, 2006

REMARKS

Claims 1-2, 5, 8-13 and 16-32 are pending in this response. Claims 1, 5, 8 and 13 are amended without prejudice. Claims 20-32 are newly added without entering any new matter.

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Claims 1-2, 5 and 8-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention

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Applicant asserts that the amended claim 1 is patentable under 35 U.S.C. 112. The first harmonic mixer of the original claim 1 lacking antecedent basis is corrected as the first mixer of the amended claim 1. Therefore, reconsideration of claim 1 is respectfully requested. As claims 2, 5 and 8-12 are dependent upon claim 1, if claim 1 is found to be allowable, so too should the dependent claims.

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Claims 13 and 16 are rejected under 35 USC 102(e) as being anticipated by the admitted prior art (APA) disclosed by Su (US Patent No. 6,999,747)

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Applicant asserts that the amended claim 13 is patentable because the amended claim 13 incorporates all of the limitations of the original claim 15, which is an allowable subject matter, and the intervening original claim 14. Hence, claim 13 is in condition of allowance. As claim 16 is dependent upon claim 13, if claim 13 is found to be allowable, so too should the dependent claim.

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Claims 1-2, 5 and 9 are rejected under 35 USC 103(a) as being anticipated by the admitted prior art (APA) disclosed by Su (US Patent No. 6,999,747) in view of Bertonis et al. (US Patent Application Publication No. 2005/0235333)

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Applicant found that Bertonis et al. has an effective US filing date 2005/1/18 (benefited from a provision application with No. 60/645,480) later than the filing date 2003/12/4 of the present invention. Although Bertonis et al. is also a continuation-in-part of an US application (US Patent Application No. 10/463,483) filed on 2003/6/16, this US application fails to disclose a harmonic mixer as disclosed by Bertonis et al. For the above-mentioned reasons, Bertonis et al. is not a qualified prior art over the present invention and therefore withdrawal of the current 103(a) rejection is respectfully requested.

Besides, claim 1 is amended to incorporate some limitations of the original claim 3 and all of the limitations of the original claim 6. Hence, Applicant believes that the amended claim 1 is allowable over the prior arts made of record and therefore reconsideration of claim 1 is respectfully requested. As claims 2, 5 and 9 are dependent upon claim 1, if claim 1 is found to be allowable, so too should the dependent claims.

Claims 20-32 are newly added without entering any new matters

Some newly added claims are discussed below for clarification.

Claim 21 recites:
Claim 21 (New): A television tuner comprising:
a first mixer coupled to a received RF signal for converting the received RF signal to an intermediate frequency signal;
a first local oscillator for providing an oscillating signal except for a differential signal to the first mixer;
a band-pass filter coupled to the first mixer for filtering the intermediate frequency signal and thereby generating a pass band signal;
a second mixer coupled to the band-pass filter for converting the pass band signal to

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an in-phase baseband signal; and
a third mixer coupled to the band-pass filter for converting the pass band signal to a quadrature-phase baseband signal;
wherein the intermediate frequency signal has a desired channel in the received
5 RF signal according to the center frequency of the bandwidth of the band-pass filter.
(Emphasis added)

10 An embodiment of the invention of claim 21 could be referred to fig. 2 of the specification. The oscillator 206 of fig. 2 corresponding to the first local oscillator of claim 21 provides a zero degrees phase-delayed reference signal and a 90 degrees phase-delayed reference signal to the mixer 204 (Paragraph [0022], Page 8 of 17). Since the signal provided by the oscillator 206 is not a differential signal, the first local
15 oscillator of claim 21 providing an oscillating signal except for a differential signal to the first mixer is fully disclosed by the specification. Furthermore, the specification also recites "The output of the first harmonic mixer 204 has a desired channel in the received RF signal positioned at 1220MHz or 1090MHz, according to the center frequency of the bandwidth of the band-pass filter 210" (Paragraph [0021], Page 7 of 17). Since the output of the first harmonic mixer 204 is the intermediate frequency
20 signal, the limitations recited by the wherein clause of claim 21 are actually revealed by the specification.

Claim 27 recites:

Claim 27 (New): A television tuner comprising:
25 a first mixer coupled to a received RF signal for converting the received RF signal to an intermediate frequency signal according to an oscillating signal;
a first local oscillator for providing the oscillating signal to the first mixer;
a band-pass filter coupled to the first mixer for filtering the intermediate frequency

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signal and thereby generating a filtered intermediate frequency signal; and
a mixing unit coupled to the band-pass filter for converting the filtered intermediate
frequency signal to a baseband signal;

wherein the frequency range of the oscillating signal is narrower than the
5 frequency range of the received RF signal.

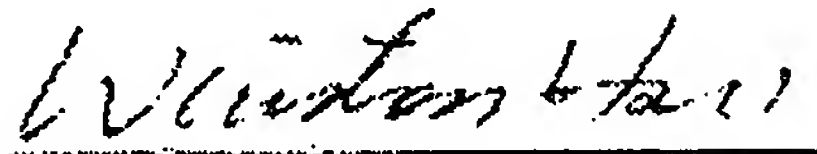
(Emphasis added)

An embodiment of the invention of claim 27 could be referred to fig. 2 of the
specification. The oscillator 206 of fig. 2 corresponding to the first local oscillator of
10 claim 27 provides an oscillating signal with a frequency range 635~1040MHz
(Paragraph [0022], Page 8 of 17). Since the RF signal RF_IN of fig. 2 is a
conventional RF signal (the same as the RF signal RF_IN of fig. 1 having a frequency
range 50~860MHz) and the frequency range 635~1040MHz of the oscillating signal is
narrower than the frequency range 50~860MHz of the RF signal RF_IN, the limitations
15 recited by the wherein clause of claim 27 are fully supported by the specification.

Consideration of pending claims 1-2, 5, 8-13 and 16-32 is respectfully
requested.

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Sincerely yours,



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Winston Hsu, Patent Agent No. 41,526

5 P.O. BOX 506, Merrifield, VA 22116, U.S.A.

Voice Mail: 302-729-1562

Facsimile: 806-498-6673

e-mail : winstonhsu@naipo.com

- 10 Note: Please leave a message in my voice mail if you need to talk to me. (The time in D.C. is 12 hours behind the Taiwan time, i.e. 9 AM in D.C. = 9 PM in Taiwan.)